

## SEQUENCE LISTING

<110> The United States of America as Represented by the Secretary of the Department of Health and Human Services, Centers for Disease Control and Prevention

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Steiner, Bret  
Berta, Rodes

<120> COMPOSITIONS AND METHODS FOR DETECTING TREPONEMA PALLIDUM

<130> 6395-61666

<150> PCT/US00/16425

<151> 2000-06-14

<150> US 60/138,981

<151> 1999-06-14

<160> 26

<170> PatentIn version 3.1

<210> 1

<211> 2945

<212> DNA

<213> Treponema pallidum

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<221> CDS

<222> (919)..(2217)

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<221> misc\_feature

<223> Subspecies: pallidum (Nichols strain)

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<223> Subspecies: pallidum (Nichols strain)

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Gln Leu Gly Ile Gly Val Tyr Gln Ala Val Arg Val Arg Val Arg Thr
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Leu Ala Ser Leu Pro Ser Arg Val Pro Ala Arg Pro Ala Gln Arg Asp
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Pro Leu Ser Ser Pro Pro Ala Gly His Thr Val Pro Glu Tyr Arg Asp
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Thr Val Ile Phe Asp Asp Pro Arg Leu Val Ser Pro Leu Ser Arg Glu  
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Val Glu Asp Ala Pro Lys Val Val Glu Pro Ala Ser Glu Arg Glu Gly  
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Gly Glu Arg Glu Val Glu Asp Ala Pro Lys Val Val Glu Pro Ala Ser  
 145 150 155 160

Glu Arg Glu Gly Gly Glu Arg Glu Val Glu Asp Val Pro Lys Val Val  
 165 170 175

Glu Pro Ala Ser Glu Arg Glu Gly Gly Glu Arg Glu Val Glu Asp Ala  
 180 185 190

Pro Lys Val Val Glu Pro Ala Ser Glu Arg Glu Gly Gly Glu Arg Glu  
 195 200 205

Val Glu Asp Val Pro Lys Val Val Glu Pro Ala Ser Glu Arg Glu Gly  
 210 215 220

Gly Glu Arg Glu Val Glu Asn Val Pro Lys Val Val Glu Pro Ala Ser  
 225 230 235 240

Glu Arg Glu Gly Gly Glu Arg Glu Val Glu Asp Ala Pro Lys Val Val  
 245 250 255

Glu Pro Ala Ser Glu Arg Glu Gly Gly Glu Arg Glu Val Glu Asp Ala  
 260 265 270

Pro Lys Val Val Glu Pro Ala Ser Glu Arg Glu Gly Gly Glu Arg Glu  
 275 280 285

Val Glu Asp Val Pro Lys Val Val Glu Pro Ala Ser Glu Arg Glu Gly  
 290 295 300

Gly Glu Arg Glu Val Glu Asp Val Pro Lys Val Val Glu Pro Ala Ser  
 305 310 315 320

Glu Arg Glu Gly Gly Glu Arg Glu Val Glu Asp Val Pro Lys Val Val  
 325 330 335

Glu Pro Ala Ser Glu Arg Glu Gly Gly Glu Arg Glu Val Glu Asp Val  
 340 345 350

Pro Lys Val Val Glu Pro Ala Ser Glu Arg Glu Gly Glu Arg Glu  
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Val Glu Asp Val Pro Gly Val Val Glu Pro Ala Ser Gly His Glu Gly  
370 375 380

Gly Glu Arg Glu Val Glu Asp Val Pro Gly Val Val Glu Pro Ala Ser  
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<222> (1)..(699)  
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<223> Subspecies: *pertenue* (CDC-2 strain)

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Ser Asn Leu Glu Lys Asn Ala Lys Ala Gln Ala Val Val Ile Gly His  
20 25 30  
gca ggg atc ccc ggt ctt cta gtt agc ctt gca ccc gct gct gca gca 144  
Ala Gly Ile Pro Gly Leu Leu Val Ser Leu Ala Pro Ala Ala Ala Ala  
35 40 45  
cag ctt ggg att ggc gta tac caa gct gtg cgt gta cgc gta cgt acc 192  
Gln Leu Gly Ile Gly Val Tyr Gln Ala Val Arg Val Arg Val Arg Thr  
50 55 60  
ttg ggt acc gtg cgc ggt ggg tct caa aca agt cag gac gga ctg tcc 240  
Leu Gly Thr Val Arg Gly Gly Ser Gln Thr Ser Gln Asp Gly Leu Ser  
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ctt gca tct ttg cgc tcc cgt gtg cct gcg cgc ccc gcg cag cgt gat 288  
Leu Ala Ser Leu Pro Ser Arg Val Pro Ala Arg Pro Ala Gln Arg Asp  
85 90 95

cct ctg tca tcc ccg ccg gca ggt cac, act gta ccg gaa tat cgc gat 336  
 Pro Leu Ser Ser Pro Pro Ala Gly His Thr Val Pro Glu Tyr Arg Asp  
 100 105 110  
 acg gtt att ttc gat gac ccg cgt ttg gtt tcc cct ttg tct cgt gag 384  
 Thr Val Ile Phe Asp Asp Pro Arg Leu Val Ser Pro Leu Ser Arg Glu  
 115 120 125  
 gtg gag gac gtg ccg aag gta gtg gag ccg gcc tct gag cgt gag gga 432  
 Val Glu Asp Val Pro Lys Val Val Glu Pro Ala Ser Glu Arg Glu Gly  
 130 135 140  
 ggg gag cgt gag gtg gag gac gtg ccg aag gta gtg gag ccg gcc tct 480  
 Gly Glu Arg Glu Val Glu Asp Val Pro Lys Val Val Glu Pro Ala Ser  
 145 150 155 160  
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 Glu Arg Glu Gly Glu Glu Arg Glu Val Glu Asp Val Pro Lys Val Val  
 165 170 175  
 gag ccg gcc tct gag cgt gag gga ggg gag cgt gag gtg gag gac gtg 576  
 Glu Pro Ala Ser Ser Glu Arg Glu Gly Gly Glu Arg Glu Val Glu Asp Val  
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 Pro Lys Val Val Glu Pro Ala Ser Glu Arg Glu Gly Gly Glu Arg Glu  
 195 200 205  
 gtc gct tct cag cat acg aag cag cca tcc cac tgg gtt tcc aac tca 672  
 Val Ala Ser Gln His Thr Lys Gln Pro Ser His Ser Val Ser Asn Ser  
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 Ala Pro Asn Gln Phe Arg Lys Pro  
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 Ala Gly Ile Pro Gly Leu Leu Val Ser Leu Ala Pro Ala Ala Ala Ala  
 35 40 45

Gln Leu Gly Ile Gly Val Tyr Gln Ala Val Arg Val Arg Val Arg Thr  
 50 55 60

Leu Gly Thr Val Arg Gly Gly Ser Gln Thr Ser Gln Asp Gly Leu Ser  
 65 70 75 80

Leu Ala Ser Leu Pro Ser Arg Val Pro Ala Arg Pro Ala Gln Arg Asp  
 85 90 95

Pro Leu Ser Ser Pro Pro Ala Gly His Thr Val Pro Glu Tyr Arg Asp  
 100 105 110

Thr Val Ile Phe Asp Asp Pro Arg Leu Val Ser Pro Leu Ser Arg Glu  
 115 120 125

Val Glu Asp Val Pro Lys Val Val Glu Pro Ala Ser Arg Glu Gly  
 130 135 140

Gly Glu Arg Glu Val Glu Asp Val Pro Lys Val Val Glu Pro Ala Ser  
 145 150 155 160

Glu Arg Glu Gly Gly Glu Arg Glu Val Glu Asp Val Pro Lys Val Val  
 165 170 175

Glu Pro Ala Ser Glu Arg Glu Gly Gly Glu Arg Glu Val Glu Asp Val  
 180 185 190

Pro Lys Val Val Glu Pro Ala Ser Glu Arg Glu Gly Gly Glu Arg Glu  
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Ala Pro Asn Gln Phe Arg Lys Pro  
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&lt;223&gt; Subspecies: endemicum (Bosnia strain)

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agc aac tta gaa aag aat gcc aag gct cag gca gtg gtt att ggg cac 96  
 Ser Asn Leu Glu Lys Asn Ala Lys Ala Gln Ala Val Val Ile Gly His  
 20 25 30

gca ggg atc ccc ggt ctt cta gtt agc ctt gca ccc gct gct gca gca 144  
 Ala Gly Ile Pro Gly Leu Leu Val Ser Leu Ala Pro Ala Ala Ala Ala  
 35 40 45

cag ctt ggg att ggc gta tac caa gct gtg cgt gta cgc gta cgt acc 192  
 Gln Leu Gly Ile Gly Val Tyr Gln Ala Val Arg Val Arg Thr  
 50 55 60

ttg ggt acc gtg cgc ggt ggg tct caa aca agt cag gac gga ctg tcc 240  
 Leu Gly Thr Val Arg Gly Ser Gln Thr Ser Gln Asp Gly Leu Ser  
 65 70 75 80

ctt gca tct ttg ccg tcc cgt gtg cct gcg cgc ccc gcg cag cgt gat 288  
 Leu Ala Ser Leu Pro Ser Arg Val Pro Ala Arg Pro Ala Gln Arg Asp  
 85 90 95

cct ctg tca tcc ccg ccg gca ggt cac act gta ccg gaa tat cgc gat 336  
 Pro Leu Ser Ser Pro Pro Ala Gly His Thr Val Pro Glu Tyr Arg Asp  
 100 105 110

acg gtt att ttc gat gac ccg cgt ttg gtt tcc cct ttg tct cgt gag 384  
 Thr Val Ile Phe Asp Asp Pro Arg Leu Val Ser Pro Leu Ser Arg Glu  
 115 120 125

gtg gag gac gtg ccg aag gta gtg gag ccg gcc tct gag cgt gag gga 432  
 Val Glu Asp Val Pro Lys Val Val Glu Pro Ala Ser Glu Arg Glu Gly  
 130 135 140

ggg gag cgt gag gtg gag gac gtg ccg aag gta gtg gag ccg gcc tct 480  
 Gly Glu Arg Glu Val Glu Asp Val Pro Lys Val Val Glu Pro Ala Ser  
 145 150 155 160

gag cgt gag gga ggg gag cgt gag gtg gag gac gtg ccg aag gta gtg 528  
 Glu Arg Glu Gly Glu Arg Glu Val Glu Asp Val Pro Lys Val Val  
 165 170 175

gag ccg gcc tct gag cgt gag gga ggg gag cgt gag gtg gag gac gtg 576  
 Glu Pro Ala Ser Glu Arg Glu Gly Glu Arg Glu Val Glu Asp Val  
 180 185 190

ccg aag gta gtg gag ccg gcc tct gag cgt gag gga ggg gag cgt gag 624  
 Pro Lys Val Val Glu Pro Ala Ser Glu Arg Glu Gly Glu Arg Glu  
 195 200 205

gtg gag gac gtg ccg aag gta gtg gag ccg gcc tct gag cgt gag gga 672  
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 210 215 220

ggg gag cgt gag gtg gag gac gtg ccg aag gta gtg gag ccg gcc tct 720

Gly Glu Arg Glu Val Glu Asp Val Pro Lys Val Val Glu Pro Ala Ser  
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 Glu Arg Glu Gly Gly Glu Arg Glu Val Glu Asp Val Pro Lys Val Val  
 245 250 255  
 gag ccg gcc tct gag cgt gag gga ggg gag cgt gag gtg gag gac gtg 816  
 Glu Pro Ala Ser Glu Arg Glu Gly Gly Glu Arg Glu Val Glu Asp Val  
 260 265 270  
 ccg aag gta gtg gag ccg gcc tct gag cgt gag gga ggg gag cgt gag 864  
 Pro Lys Val Val Glu Pro Ala Ser Glu Arg Glu Gly Gly Glu Arg Glu  
 275 280 285  
 gtc gct tct cag cat acg aag cag cca tcc cac tcg gtt tcc aac tca 912  
 Val Ala Ser Gln His Thr Lys Glu Pro Ser His Ser Val Ser Asn Ser  
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 35 40 45  
 Gln Leu Gly Ile Gly Val Tyr Gln Ala Val Arg Val Arg Val Arg Thr  
 50 55 60  
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 65 70 75 80  
 Leu Ala Ser Leu Pro Ser Arg Val Pro Ala Arg Pro Ala Gln Arg Asp  
 85 90 95  
 Pro Leu Ser Ser Pro Pro Ala Gly His Thr Val Pro Glu Tyr Arg Asp  
 100 105 110

Thr Val Ile Phe Asp Asp Pro Arg Leu Val Ser Pro Leu Ser Arg Glu  
 115 120 125

Val Glu Asp Val Pro Lys Val Val Glu Pro Ala Ser Glu Arg Glu Gly  
 130 135 140

Gly Glu Arg Glu Val Glu Asp Val Pro Lys Val Val Glu Pro Ala Ser  
 145 150 155 160

Glu Arg Glu Gly Gly Glu Arg Glu Val Glu Asp Val Pro Lys Val Val  
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Glu Pro Ala Ser Glu Arg Glu Gly Gly Glu Arg Glu Val Glu Asp Val  
 180 185 190

Pro Lys Val Val Glu Pro Ala Ser Glu Arg Glu Gly Gly Glu Arg Glu  
 195 200 205

Val Glu Asp Val Pro Lys Val Val Glu Pro Ala Ser Glu Arg Glu Gly  
 210 215 220

Gly Glu Arg Glu Val Glu Asp Val Pro Lys Val Val Glu Pro Ala Ser  
 225 230 235 240

Glu Arg Glu Gly Gly Glu Arg Glu Val Glu Asp Val Pro Lys Val Val  
 245 250 255

Glu Pro Ala Ser Glu Arg Glu Gly Gly Glu Arg Glu Val Glu Asp Val  
 260 265 270

Pro Lys Val Val Glu Pro Ala Ser Glu Arg Glu Gly Gly Glu Arg Glu  
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Val Ala Ser Gln His Thr Lys Gln Pro Ser His Ser Val Ser Asn Ser  
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Ala Pro Asn Gln Phe Arg Lys Pro  
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Pro Ala Ser

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Ala Gln Ala Val Val  
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Gly Gly Glu Arg  
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Glu Val Glu Asp Ala Pro Lys Val Val Glu Pro Ala Ser Glu Arg Glu  
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Gly Gly Glu Arg  
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Gly Gly Glu Arg  
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&lt;221&gt; misc\_feature

&lt;223&gt; Subspecies: pallidum (Nichols strain)

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1			5					10					15			

agc	aac	tta	gaa	aag	aat	gcc	aag	gct	cag	gca	gtg	gtt	att	ggg	cac	96
Ser	Asn	Leu	Glu	Lys	Asn	Ala	Lys	Ala	Gln	Ala	Val	Val	Ile	Gly	His	
		20					25					30				

gca	ggg	atc	ccc	ggg	ctt	cta	gtt	agc	ctt	gca	ccc	gct	gct	gca	gca	144
Ala	Gly	Ile	Pro	Gly	Leu	Leu	Val	Ser	Leu	Ala	Pro	Ala	Ala	Ala	Ala	
		35					40					45				

cag	ctt	ggg	att	ggc	gta	tac	caa	gct	gtg	cgt	gta	cgc	gta	cgt	acc	192
Gln	Leu	Gly	Ile	Gly	Val	Tyr	Gln	Ala	Val	Arg	Val	Arg	Val	Arg	Thr	
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Leu	Gly	Thr	Val	Arg	Gly	Gly	Ser	Gln	Thr	Ser	Gln	Asp	Gly	Leu	Ser	
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ctt	gca	tct	ttg	ccg	tcc	cgt	gtg	cct	gcg	cgc	ccc	gcg	cag	cgt	gat	288
Leu	Ala	Ser	Leu	Pro	Ser	Arg	Val	Pro	Ala	Arg	Pro	Ala	Gln	Arg	Asp	
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cct	ctg	tca	tcc	ccg	ccg	gca	ggg	cac	act	gta	ccg	gaa	tat	cgc	gat	336
Pro	Leu	Ser	Ser	Pro	Pro	Ala	Gly	His	Thr	Val	Pro	Glu	Tyr	Arg	Asp	
			100					105					110			

acg	gtt	att	ttc	gat	gac	ccg	cgt	ttg	gtt	tcc	cct	ttg	tct	cgt	gag	384
Thr	Val	Ile	Phe	Asp	Asp	Pro	Arg	Leu	Val	Ser	Pro	Leu	Ser	Arg	Glu	
		115					120					125				

gtg	gag	gac	gcg	ccg	aag	gta	gtg	gag	ccg	gcc	tct	gag	cgt	gag	gga	432
Val	Glu	Asp	Ala	Pro	Lys	Val	Val	Glu	Pro	Ala	Ser	Glu	Arg	Glu	Gly	
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ggg	gag	cgt	gag	gtg	gag	gac	gcg	ccg	aag	gta	gtg	gag	ccg	gcc	tct	480
Gly	Glu	Arg	Glu	Val	Glu	Asp	Ala	Pro	Lys	Val	Val	Glu	Pro	Ala	Ser	
145				150					155					160		

gag	cgt	gag	gga	ggg	gag	cgt	gag	gtg	gag	gac	gtg	ccg	aag	gta	gtg	528
Glu	Arg	Glu	Gly	Gly	Glu	Arg	Glu	Val	Glu	Asp	Val	Pro	Lys	Val	Val	
			165					170						175		

gag	ccg	gcc	tct	gag	cgt	gag	gga	ggg	gag	cgt	gag	gtg	gag	gac	gcg	576
Glu	Pro	Ala	Ser	Glu	Arg	Glu	Gly	Gly	Glu	Arg	Glu	Val	Glu	Asp	Ala	
		180					185					190				

ccg	aag	gta	gtg	gag	ccg	gcc	tct	gag	cgt	gag	gga	ggg	gag	cgt	gag	624
Pro	Lys	Val	Val	Glu	Pro	Ala	Ser	Glu	Arg	Glu	Gly	Gly	Glu	Arg	Glu	
		195				200						205				

gtg	gag	gac	gtg	ccg	aag	gta	gtg	gag	ccg	gcc	tct	gag	cgt	gag	gga	672
Val	Glu	Asp	Val	Pro	Lys	Val	Val	Glu	Pro	Ala	Ser	Glu	Arg	Glu	Gly	

210	215	220	
ggg gag cgt gag gtg gag gac gtg ccg aag gta gtg gag ccg gcc tct Gly Glu Arg Glu Val Glu Asp Val Pro Lys Val Val Glu Pro Ala Ser 225 230 235 240			720
gag cgt gag gga ggg gag cgt gag gtg gag gac gcg ccg aag gta gtg Glu Arg Glu Gly Glu Glu Arg Glu Val Glu Asp Ala Pro Lys Val Val 245 250 255			768
gag ccg gcc tct gag cgt gag gga ggg gag cgt gag gtg gag gac gcg Glu Pro Ala Ser Glu Arg Glu Gly Gly Glu Arg Glu Val Glu Asp Ala 260 265 270			816
ccg aag gta gtg gag ccg gcc tct gag cgt gag gga ggg gag cgt gag Pro Lys Val Val Glu Pro Ala Ser Glu Arg Glu Gly Gly Glu Arg Glu 275 280 285			864
gtg gag gac gtg ccg aag gta gtg gag ccg gcc tct gag cgt gag gga Val Glu Asp Val Pro Lys Val Val Glu Pro Ala Ser Glu Arg Glu Gly 290 295 300			912
ggg gag cgt gag gtg gag gac gtg ccg aag gta gtg gag ccg gcc tct Gly Glu Arg Glu Val Glu Asp Val Pro Lys Val Val Glu Pro Ala Ser 305 310 315 320			960
gag cgt gag gga ggg gag cgt gag gtg gag gac gtg ccg aag gta gtg Glu Arg Glu Gly Glu Glu Arg Glu Val Glu Asp Val Pro Lys Val Val 325 330 335			1008
gag ccg gcc tct gag cgt gag gga ggg gag cgt gag gtg gag gac gtg Glu Pro Ala Ser Glu Arg Glu Gly Gly Glu Arg Glu Val Glu Asp Val 340 345 350			1056
ccg aag gta gtg gag ccg gcc tct gag cgt gag gga ggg gag cgt gag Pro Lys Val Val Glu Pro Ala Ser Glu Arg Glu Gly Gly Glu Arg Glu 355 360 365			1104
gtg gag gac gtg ccg ggg gta gtg gag ccg gcc tct ggg cat gaa gga Val Glu Asp Val Pro Gly Val Val Glu Pro Ala Ser Gly His Glu Gly 370 375 380			1152
ggg gag cgt gag gtg gag gac gtg ccg ggg gta gtg gag ccg gcc tct Gly Glu Arg Glu Val Glu Asp Val Pro Gly Val Val Glu Pro Ala Ser 385 390 395 400			1200
ggg cat gaa gga ggg gag cgt gag gtc gct tct cag cat acg aag cag Gly His Glu Gly Glu Arg Glu Val Ala Ser Gln His Thr Lys Gln 405 410 415			1248
cca tcc cac tcg gtt tcc aac tca gct ccc aat cag ttt cgg aac cct Pro Ser His Ser Val Ser Asn Ser Ala Pro Asn Gln Phe Arg Asn Pro 420 425 430			1296
gag ggg gaa ctc ccc ttt acg ctc cct gac cta tcc gag tca gaa att Glu Gly Glu Leu Pro Phe Thr Leu Pro Asp Leu Ser Glu Ser Glu Ile 435 440 445			1344
gtg gtt ccg gag gaa cag aaa gga cgt gcg cat ccc cag gtg ata ccc Val Val Pro Glu Glu Gln Lys Gly Arg Ala His Pro Gln Val Ile Pro 450 455 460			1392



gag ggt gcg cca cgt gga ctg caa cct ggt gaa tac tac gta cag att 1440  
 Glu Gly Ala Pro Arg Gly Leu Gln Pro Gly Glu Tyr Tyr Val Gln Ile  
 465 470 475 480

gca gtc ttt cat gac gct atc cag gtg cag agc att gtc cac cgt tac 1488  
 Ala Val Phe His Asp Ala Ile Gln Val Gln Ser Ile Val His Arg Tyr  
 485 490 495

ggg gta gaa tac ccc atc gca gtg gag cag gac atc cat gaa ggt aag 1536  
 Gly Val Glu Tyr Pro Ile Ala Val Glu Gln Asp Ile His Glu Gly Lys  
 500 505 510

gtg cgt ttc acc gta tgc gtc ggt cct gtc caa aaa gac gaa cgc ggc 1584  
 Val Arg Phe Thr Val Cys Val Gly Pro Val Gln Lys Asp Glu Arg Gly  
 515 520 525

gcg gta cta gag aac ttc caa agg ttt gga ttc aag gac gcc ttt ctg 1632  
 Ala Val Leu Glu Asn Phe Gln Arg Phe Gly Phe Lys Asp Ala Phe Leu  
 530 535 540

aaa aag gcg cga tga 1647  
 Lys Lys Ala Arg  
 545

<210> 20

<211> 548

<212> PRT

<213> Treponema pallidum

<220>

<221> misc\_feature

<223> Subspecies: pallidum (Nichols strain)

<400> 20

Met Phe Val Arg Ser Asp Met Phe Pro Lys Asn Thr Ala Val Glu Ile  
 1 5 10 15

Ser Asn Leu Glu Lys Asn Ala Lys Ala Gln Ala Val Val Ile Gly His  
 20 25 30

Ala Gly Ile Pro Gly Leu Leu Val Ser Leu Ala Pro Ala Ala Ala Ala  
 35 40 45

Gln Leu Gly Ile Gly Val Tyr Gln Ala Val Arg Val Arg Val Arg Thr  
 50 55 60

Leu Gly Thr Val Arg Gly Gly Ser Gln Thr Ser Gln Asp Gly Leu Ser  
 65 70 75 80

Leu Ala Ser Leu Pro Ser Arg Val Pro Ala Arg Pro Ala Gln Arg Asp  
 85 90 95

Pro Leu Ser Ser Pro Pro Ala Gly His Thr Val Pro Glu Tyr Arg Asp  
 100 105 110  
 Thr Val Ile Phe Asp Asp Pro Arg Leu Val Ser Pro Leu Ser Arg Glu  
 115 120 125  
 Val Glu Asp Ala Pro Lys Val Val Glu Pro Ala Ser Glu Arg Glu Gly  
 130 135 140  
 Gly Glu Arg Glu Val Glu Asp Ala Pro Lys Val Val Glu Pro Ala Ser  
 145 150 155 160  
 Glu Arg Glu Gly Gly Glu Arg Glu Val Glu Asp Val Pro Lys Val Val  
 165 170 175  
 Glu Pro Ala Ser Glu Arg Glu Gly Gly Glu Arg Glu Val Glu Asp Ala  
 180 185 190  
 Pro Lys Val Val Glu Pro Ala Ser Glu Arg Glu Gly Gly Glu Arg Glu  
 195 200 205  
 Val Glu Asp Val Pro Lys Val Val Glu Pro Ala Ser Glu Arg Glu Gly  
 210 215 220  
 Gly Glu Arg Glu Val Glu Asp Val Pro Lys Val Val Glu Pro Ala Ser  
 225 230 235 240  
 Glu Arg Glu Gly Gly Glu Arg Glu Val Glu Asp Ala Pro Lys Val Val  
 245 250 255  
 Glu Pro Ala Ser Glu Arg Glu Gly Gly Glu Arg Glu Val Glu Asp Ala  
 260 265 270  
 Pro Lys Val Val Glu Pro Ala Ser Glu Arg Glu Gly Gly Glu Arg Glu  
 275 280 285  
 Val Glu Asp Val Pro Lys Val Val Glu Pro Ala Ser Glu Arg Glu Gly  
 290 295 300  
 Gly Glu Arg Glu Val Glu Asp Val Pro Lys Val Val Glu Pro Ala Ser  
 305 310 315 320  
 Glu Arg Glu Gly Gly Glu Arg Glu Val Glu Asp Val Pro Lys Val Val  
 325 330 335  
 Glu Pro Ala Ser Glu Arg Glu Gly Gly Glu Arg Glu Val Glu Asp Val

340										345										350															
Pro	Lys	Val	Val	Glu	Pro	Ala	Ser	Glu	Arg	Glu	Gly	Gly	Glu	Arg	Glu	Val	Val	Glu	Pro	Ala	Ser	Glu	Arg	Glu	Val	Val	Glu	Pro	Ala	Ser	Glu	Arg	Glu		
355										360										365															
Val	Glu	Asp	Val	Pro	Gly	Val	Glu	Pro	Ala	Ser	Gly	His	Glu	Gly	Val	Glu	Pro	Ala	Ser	Gly	His	Glu	Gly	Val	Glu	Pro	Ala	Ser	Gly	His	Glu	Gly			
370										375										380															
Gly	Glu	Arg	Glu	Val	Glu	Asp	Val	Pro	Gly	Val	Val	Glu	Pro	Ala	Ser	Gly	Glu	Val	Pro	Ala	Ser	Gly	His	Glu	Gly	Gly	Glu	Val	Pro	Ala	Ser	Gly	His	Glu	Gly
385										390										395															
Gly	His	Glu	Gly	Gly	Glu	Arg	Glu	Val	Ala	Ser	Gln	His	Thr	Lys	Gln	Gly	His	Glu	Gly	Gly	Glu	Arg	Glu	Val	Ala	Ser	Gln	His	Thr	Lys	Gln				
										405										410															
Pro	Ser	His	Ser	Val	Ser	Asn	Ser	Ala	Pro	Asn	Gln	Phe	Arg	Asn	Pro	Pro	Ser	His	Ser	Val	Ser	Asn	Ser	Ala	Pro	Asn	Gln	Phe	Arg	Asn	Pro				
420										425										430															
Glu	Gly	Glu	Leu	Pro	Phe	Thr	Leu	Pro	Asp	Leu	Ser	Glu	Ser	Glu	Ile	Glu	Gly	Glu	Leu	Pro	Phe	Thr	Leu	Pro	Asp	Leu	Ser	Glu	Ser	Glu	Ile				
435										440										445															
Val	Val	Pro	Glu	Glu	Gln	Lys	Gly	Arg	Ala	His	Pro	Gln	Val	Ile	Pro	Val	Val	Pro	Glu	Glu	Gln	Lys	Gly	Arg	Ala	His	Pro	Gln	Val	Ile	Pro				
450										455										460															
Glu	Gly	Ala	Pro	Arg	Gly	Leu	Gln	Pro	Gly	Glu	Tyr	Tyr	Val	Gln	Ile	Glu	Gly	Ala	Pro	Arg	Gly	Leu	Gln	Pro	Gly	Glu	Tyr	Tyr	Val	Gln	Ile				
465										470										475															
Ala	Val	Phe	His	Asp	Ala	Ile	Gln	Val	Gln	Ser	Ile	Val	His	Arg	Tyr	Ala	Val	Phe	His	Asp	Ala	Ile	Gln	Val	Gln	Ser	Ile	Val	His	Arg	Tyr				
485										490										495															
Gly	Val	Glu	Tyr	Pro	Ile	Ala	Val	Glu	Gln	Asp	Ile	His	Glu	Gly	Lys	Gly	Val	Glu	Tyr	Pro	Ile	Ala	Val	Glu	Gln	Asp	Ile	His	Glu	Gly	Lys				
500										505										510															
Val	Arg	Phe	Thr	Val	Cys	Val	Gly	Pro	Val	Gln	Lys	Asp	Glu	Arg	Gly	Val	Arg	Phe	Thr	Val	Cys	Val	Gly	Pro	Val	Gln	Lys	Asp	Glu	Arg	Gly				
515										520										525															
Ala	Val	Leu	Glu	Asn	Phe	Gln	Arg	Phe	Gly	Phe	Lys	Asp	Ala	Phe	Leu	Ala	Val	Leu	Glu	Asn	Phe	Gln	Arg	Phe	Gly	Phe	Lys	Asp	Ala	Phe	Leu				
530										535										540															
Lys	Lys	Ala	Arg																																
545																																			
<210> 21																																			
<211> 1047																																			
<212> DNA																																			
<213> Treponema pallidum																																			
<220>																																			

<221> CDS  
 <222> (1)..(1047)  
 <223>

<220>  
 <221> misc\_feature  
 <223> Subspecies: pertenuis (CDC-2 strain)

<400> 21  
 atg ttt gtg cgc agt gac atg ttc ccc aaa aac act gct gtt gaa att 48  
 Met Phe Val Arg Ser Asp Met Phe Pro Lys Asn Thr Ala Val Glu Ile  
 1 5 10 15  
 agc aac tta gaa aag aat gcc aag gct cag gca gtg gtt att ggg cac 96  
 Ser Asn Leu Glu Lys Asn Ala Lys Val Ser Leu Ala Val Val Ile Gly His  
 20 25 30  
 gca ggg atc ccc ggt ctt cta gtt agc ctt gca ccc gct gct gca gca 144  
 Ala Gly Ile Pro Gly Leu Leu Val Ser Leu Ala Pro Ala Ala Ala Ala  
 35 40 45  
 cag ctt ggg att ggc gta tac caa gct gtg cgt gta cgc gta cgt acc 192  
 Gln Leu Gly Ile Gly Val Tyr Gln Ala Val Arg Val Arg Val Arg Thr  
 50 55 60  
 ttg ggt acc gtg cgc ggt ggg tct caa aca agt cag gac gga ctg tcc 240  
 Leu Gly Thr Val Arg Gly Gly Ser Gln Thr Ser Gln Asp Gly Leu Ser  
 65 70 75 80  
 ctt gca tct ttg ccg tcc cgt gtg cct gcg cgc ccc gcg cag cgt gat 288  
 Leu Ala Ser Leu Pro Ser Arg Val Pro Ala Arg Pro Ala Gln Arg Asp  
 85 90 95  
 cct ctg tca tcc ccg ccg gca ggt cac act gta ccg gaa tat cgc gat 336  
 Pro Leu Ser Ser Pro Pro Ala Gly His Thr Val Pro Glu Tyr Arg Asp  
 100 105 110  
 acg gtt att ttc gat gac ccg cgt ttg gtt tcc cct ttg tct cgt gag 384  
 Thr Val Ile Phe Asp Asp Pro Arg Leu Val Ser Pro Leu Ser Arg Glu  
 115 120 125  
 gtg gag gac gtg ccg aag gta gtg gag ccg gcc tct gag cgt gag gga 432  
 Val Glu Asp Val Pro Lys Val Val Glu Pro Ala Ser Glu Arg Glu Gly  
 130 135 140  
 ggg gag cgt gag gtg gag gac gtg ccg aag gta gtg gag ccg gcc tct 480  
 Gly Glu Arg Glu Val Glu Asp Val Pro Lys Val Val Glu Pro Ala Ser  
 145 150 155 160  
 gag cgt gag gga ggg gag cgt gag gtg gag gac gtg ccg aag gta gtg 528  
 Glu Arg Glu Gly Gly Glu Arg Glu Val Glu Asp Val Pro Lys Val Val  
 165 170 175  
 gag ccg gcc tct gag cgt gag gga ggg gag cgt gag gtg gag gac gtg 576  
 Glu Pro Ala Ser Glu Arg Glu Gly Gly Glu Arg Glu Val Glu Asp Val  
 180 185 190  
 ccg aag gta gtg gag ccg gcc tct gag cgt gag gga ggg gag cgt gag 624  
 Pro Lys Val Val Glu Pro Ala Ser Glu Arg Glu Gly Gly Glu Arg Glu

195	200	205	
gtc gct tct cag cat acg aag cag cca tcc cac tgc gtt tcc aac tca			672
Val Ala Ser Gln His Thr Lys	Gln Pro Ser His	Ser Val Ser Asn Ser	
210	215	220	
gct ccc aat cag ttt cgg aac cct gag ggg gaa ctg ccc ttt acg ctg			720
Ala Pro Asn Gln Phe Arg Asn Pro Glu Gly Glu Leu Pro Phe Thr Leu			
225	230	235	240
cct gac cta tcc gag tca gaa att gtg gtt ccg gag gaa cag aaa gga			768
Pro Asp Leu Ser Glu Ser Glu Ile Val Val Pro Glu Glu Gln Lys Gly			
245	250	255	
cgt gcg cat ccc cag gtg ata ccc gag ggt gcg cca cgt gga ctg caa			816
Arg Ala His Pro Gln Val Ile Pro Glu Gly Ala Pro Arg Gly Leu Gln			
260	265	270	
cct ggt gaa tac tac gta cag att gca gtc ttt cat gac gct atc cag			864
Pro Gly Glu Tyr Tyr Val Gln Ile Ala Val Phe His Asp Ala Ile Gln			
275	280	285	
gtg cag agc att gtc cac cgt tac ggg gta gaa tac ccc atc gca gtg			912
Val Gln Ser Ile Val His Arg Tyr Gly Val Glu Tyr Pro Ile Ala Val			
290	295	300	
gag cag gac atc cat gaa ggt aag gtg cgt ttc acc gta tgc gtc ggt			960
Glu Gln Asp Ile His Glu Gly Lys Val Arg Phe Thr Val Cys Val Gly			
305	310	315	320
cct gtc caa aaa gac gaa cgc ggc gcg gta cta gag aac ttc caa agg			1008
Pro Val Gln Lys Asp Glu Arg Gly Ala Val Leu Glu Asn Phe Gln Arg			
325	330	335	
ttt gga ttc aag gac gcc ttt ctg aaa aag gcg cga tga			1047
Phe Gly Phe Lys Asp Ala Phe Leu Lys Lys Ala Arg			
340	345		
<210> 22			
<211> 348			
<212> PRT			
<213> Treponema pallidum			
<220>			
<221> misc_feature			
<223> Subspecies: pertenue (CDC-2 strain)			
<400> 22			
Met Phe Val Arg Ser Asp Met Phe Pro Lys Asn Thr Ala Val Glu Ile			
1	5	10	15
Ser Asn Leu Glu Lys Asn Ala Lys Ala Gln Ala Val Val Ile Gly His			
20	25	30	
Ala Gly Ile Pro Gly Leu Leu Val Ser Leu Ala Pro Ala Ala Ala Ala			
35	40	45	

Gln Leu Gly Ile Gly Val Tyr Gln Ala Val Arg Val Arg Val Arg Thr  
50 55 60

Leu Gly Thr Val Arg Gly Gly Ser Gln Thr Ser Gln Asp Gly Leu Ser  
65 70 75 80

Leu Ala Ser Leu Pro Ser Arg Val Pro Ala Arg Pro Ala Gln Arg Asp  
85 90 95

Pro Leu Ser Ser Pro Pro Ala Gly His Thr Val Pro Glu Tyr Arg Asp  
100 105 110

Thr Val Ile Phe Asp Asp Pro Arg Leu Val Ser Pro Leu Ser Arg Glu  
115 120 125

Val Glu Asp Val Pro Lys Val Val Glu Pro Ala Ser Glu Arg Glu Gly  
130 135 140

Gly Glu Arg Glu Val Glu Asp Val Pro Lys Val Val Glu Pro Ala Ser  
145 150 155 160

Glu Arg Glu Gly Gly Glu Arg Glu Val Glu Asp Val Pro Lys Val Val  
165 170 175

Glu Pro Ala Ser Glu Arg Glu Gly Gly Glu Arg Glu Val Glu Asp Val  
180 185 190

Pro Lys Val Val Glu Pro Ala Ser Glu Arg Glu Gly Gly Glu Arg Glu  
195 200 205

Val Ala Ser Gln His Thr Lys Gln Pro Ser His Ser Val Ser Asn Ser  
210 215 220

Ala Pro Asn Gln Phe Arg Asn Pro Glu Gly Glu Leu Pro Phe Thr Leu  
225 230 235 240

Pro Asp Leu Ser Glu Ser Glu Ile Val Val Pro Glu Glu Gln Lys Gly  
245 250 255

Arg Ala His Pro Gln Val Ile Pro Glu Gly Ala Pro Arg Gly Leu Gln  
260 265 270

Pro Gly Glu Tyr Tyr Val Gln Ile Ala Val Phe His Asp Ala Ile Gln  
275 280 285

Val Gln Ser Ile Val His Arg Tyr Gly Val Glu Tyr Pro Ile Ala Val  
290 295 300

Glu Gln Asp Ile His Glu Gly Lys Val Arg Phe Thr Val Cys Val Gly  
305 310 315 320

Pro Val Gln Lys Asp Glu Arg Gly Ala Val Leu Glu Asn Phe Gln Arg  
325 330 335

Phe Gly Phe Lys Asp Ala Phe Leu Lys Lys Ala Arg  
340 345

<210> 23

<211> 1287

<212> DNA

<213> Treponema pallidum

<220>

<221> CDS

<222> (1)..(1287)

<223>

<220>

<221> misc\_feature

<223> Subspecies: endemicum (Bosnia strain)

<400> 23

atg ttt gtg cgc agt gac atg ttc ccc aaa aac act gct gtt gaa att 48  
Met Phe Val Arg Ser Asp Met Phe Pro Lys Asn Thr Ala Val Glu Ile  
1 5 10 15

agc aac tta gaa aag aat gcc aag gct cag gca gtg gtt att ggg cac 96  
Ser Asn Leu Glu Lys Asn Ala Lys Ala Gln Ala Val Val Ile Gly His  
20 25 30

gca ggg atc ccc ggt ctt cta gtt agc ctt gca ccc gct gct gca gca 144  
Ala Gly Ile Pro Gly Leu Leu Val Ser Leu Ala Pro Ala Ala Ala Ala  
35 40 45

cag ctt ggg att ggc gta tac caa gct gtg cgt gta cgc gta cgt acc 192  
Gln Leu Gly Ile Gly Val Tyr Gln Ala Val Arg Val Arg Val Arg Thr  
50 55 60

ttg ggt acc gtg cgc ggt ggg tct caa aca agt cag gac gga ctg tcc 240  
Leu Gly Thr Val Arg Gly Gly Ser Gln Thr Ser Gln Asp Gly Leu Ser  
65 70 75 80

ctt gca tct ttg ccg tcc cgt gtg cct gcg cgc ccc gcg cag cgt gat 288  
Leu Ala Ser Leu Pro Ser Arg Val Pro Ala Arg Pro Ala Gln Arg Asp  
85 90 95

cct ctg tca tcc ccg ccg gca ggt cac act gta ccg gaa tat cgc gat 336  
Pro Leu Ser Ser Pro Pro Ala Gly His Thr Val Pro Glu Tyr Arg Asp  
100 105 110

acg gtt att ttc gat gac ccg cgt ttg gtt tcc cct ttg tct cgt gag Thr Val Ile Phe Asp Asp Pro Arg Leu Val Ser Pro Leu Ser Arg Glu 115 120 125	384
gtg gag gac gtg ccg aag gta gtg gag ccg gcc tct gag cgt gag gga Val Glu Asp Val Pro Lys Val Val Glu Pro Ala Ser Glu Arg Glu Gly 130 135 140	432
ggg gag cgt gag gtg gag gac gtg ccg aag gta gtg gag ccg gcc tct Gly Glu Arg Glu Val Glu Asp Val Pro Lys Val Val Glu Pro Ala Ser 145 150 155 160	480
gag cgt gag gga ggg gag cgt gag gtg gag gac gtg ccg aag gta gtg Glu Arg Glu Gly Gly Glu Arg Glu Val Glu Asp Val Pro Lys Val Val 165 170 175	528
gag ccg gcc tct gag cgt gag gga ggg gag cgt gag gtg gag gac gtg Glu Pro Ala Ser Glu Arg Glu Gly Gly Glu Arg Glu Val Glu Asp Val 180 185 190	576
ccg aag gta gtg gag ccg gcc tct gag cgt gag gga ggg gag cgt gag Pro Lys Val Val Glu Pro Ala Ser Glu Arg Glu Gly Glu Arg Glu 195 200 205	624
gtg gag gac gtg ccg aag gta gtg gag ccg gcc tct gag cgt gag gga Val Glu Asp Val Pro Lys Val Val Glu Pro Ala Ser Glu Arg Glu Gly 210 215 220	672
ggg gag cgt gag gtg gag gac gtg ccg aag gta gtg gag ccg gcc tct Gly Glu Arg Glu Val Glu Asp Val Pro Lys Val Val Glu Pro Ala Ser 225 230 235 240	720
gag cgt gag gga ggg gag cgt gag gtg gag gac gtg ccg aag gta gtg Glu Arg Glu Gly Gly Glu Arg Glu Val Glu Asp Val Pro Lys Val Val 245 250 255	768
gag ccg gcc tct gag cgt gag gga ggg gag cgt gag gtg gag gac gtg Glu Pro Ala Ser Glu Arg Glu Gly Gly Glu Arg Glu Val Glu Asp Val 260 265 270	816
ccg aag gta gtg gag ccg gcc tct gag cgt gag gga ggg gag cgt gag Pro Lys Val Val Glu Pro Ala Ser Glu Arg Glu Gly Gly Glu Arg Glu 275 280 285	864
gtc gct tct cag cat acg aag cag cca tcc cac tgc gtt tcc aac tca Val Ala Ser Gln His Thr Lys Gln Pro Ser His Ser Val Ser Asn Ser 290 295 300	912
gct ccc aat cag ttt cgg aac cct gag ggg gaa ctc ccc ttt acg ctc Ala Pro Asn Gln Phe Arg Asn Pro Glu Gly Glu Leu Pro Phe Thr Leu 305 310 315 320	960
cct gac cta tcc gag tca gaa att gtg gtt ccg gag gaa cag aaa gga Pro Asp Leu Ser Glu Ser Glu Ile Val Val Pro Glu Glu Gln Lys Gly 325 330 335	1008
cgt gcg cat ccc cag gtg ata ccc gag ggt gcg cca cgt gga ctg caa Arg Ala His Pro Gln Val Ile Pro Glu Gly Ala Pro Arg Gly Leu Gln 340 345 350	1056
cct ggt gaa tac tac gta cag att gca gtc ttt cat gac gct atc cag	1104



Pro Gly Glu Tyr Tyr Val Gln Ile Ala Val Phe His Asp Ala Ile Gln  
 355 360 365  
 gtg cag agc att gtc cac cgt tac ggg gta gaa tac ccc atc gca gtg 1152  
 Val Gln Ser Ile Val His Arg Tyr Gly Val Glu Tyr Pro Ile Ala Val  
 370 375 380  
 gag cag gac atc cat gaa ggt aag gtg cgt ttc acc gta tgc gtc ggt 1200  
 Glu Gln Asp Ile His Glu Gly Lys Val Arg Phe Thr Val Cys Val Gly  
 385 390 395 400  
 cct gtc caa aaa gac gaa cgc ggc gcg gta cta gag aac ttc caa agg 1248  
 Pro Val Gln Lys Asp Glu Arg Gly Ala Val Leu Glu Asn Phe Gln Arg  
 405 410 415  
 ttt gga ttc aag gac gcc ttt ctg aaa aag gcg cga tga 1287  
 Phe Gly Phe Lys Asp Ala Phe Leu Lys Lys Ala Arg  
 420 425  
 <210> 24  
 <211> 428  
 <212> PRT  
 <213> *Treponema pallidum*  
 <220>  
 <221> misc\_feature  
 <223> Subspecies: endemicum (Bosnia strain)  
 <400> 24  
 Met Phe Val Arg Ser Asp Met Phe Pro Lys Asn Thr Ala Val Glu Ile  
 1 5 10 15  
 Ser Asn Leu Glu Lys Asn Ala Lys Ala Gln Ala Val Val Ile Gly His  
 20 25 30  
 Ala Gly Ile Pro Gly Leu Leu Val Ser Leu Ala Pro Ala Ala Ala Ala  
 35 40 45  
 Gln Leu Gly Ile Gly Val Tyr Gln Ala Val Arg Val Arg Val Arg Thr  
 50 55 60  
 Leu Gly Thr Val Arg Gly Gly Ser Gln Thr Ser Gln Asp Gly Leu Ser  
 65 70 75 80  
 Leu Ala Ser Leu Pro Ser Arg Val Pro Ala Arg Pro Ala Gln Arg Asp  
 85 90 95  
 Pro Leu Ser Ser Pro Pro Ala Gly His Thr Val Pro Glu Tyr Arg Asp  
 100 105 110  
 Thr Val Ile Phe Asp Asp Pro Arg Leu Val Ser Pro Leu Ser Arg Glu  
 115 120 125

Val Glu Asp Val Pro Lys Val Val Glu Pro Ala Ser Glu Arg Glu Gly  
 130 135 140

Gly Glu Arg Glu Val Glu Asp Val Pro Lys Val Val Glu Pro Ala Ser  
 145 150 155 160

Glu Arg Glu Gly Gly Glu Arg Glu Val Glu Asp Val Pro Lys Val Val  
 165 170 175

Glu Pro Ala Ser Glu Arg Glu Gly Gly Glu Arg Glu Val Glu Asp Val  
 180 185 190

Pro Lys Val Val Glu Pro Ala Ser Glu Arg Glu Gly Gly Glu Arg Glu  
 195 200 205

Val Glu Asp Val Pro Lys Val Val Glu Pro Ala Ser Glu Arg Glu Gly  
 210 215 220

Gly Glu Arg Glu Val Glu Asp Val Pro Lys Val Val Glu Pro Ala Ser  
 225 230 235 240

Glu Arg Glu Gly Gly Glu Arg Glu Val Glu Asp Val Pro Lys Val Val  
 245 250 255

Glu Pro Ala Ser Glu Arg Glu Gly Gly Glu Arg Glu Val Glu Asp Val  
 260 265 270

Pro Lys Val Val Glu Pro Ala Ser Glu Arg Glu Gly Gly Glu Arg Glu  
 275 280 285

Val Ala Ser Gln His Thr Lys Gln Pro Ser His Ser Val Ser Asn Ser  
 290 295 300

Ala Pro Asn Gln Phe Arg Asn Pro Glu Gly Glu Leu Pro Phe Thr Leu  
 305 310 315 320

Pro Asp Leu Ser Glu Ser Glu Ile Val Val Pro Glu Glu Gln Lys Gly  
 325 330 335

Arg Ala His Pro Gln Val Ile Pro Glu Gly Ala Pro Arg Gly Leu Gln  
 340 345 350

Pro Gly Glu Tyr Tyr Val Gln Ile Ala Val Phe His Asp Ala Ile Gln  
 355 360 365

Val Gln Ser Ile Val His Arg Tyr Gly Val Glu Tyr Pro Ile Ala Val  
370 375 380

Glu Gln Asp Ile His Glu Gly Lys Val Arg Phe Thr Val Cys Val Gly  
385 390 395 400

Pro Val Gln Lys Asp Glu Arg Gly Ala Val Leu Glu Asn Phe Gln Arg  
405 410 415

Phe Gly Phe Lys Asp Ala Phe Leu Lys Lys Ala Arg  
420 425

<210> 25  
<211> 1182  
<212> DNA  
<213> Treponema pallidum

<220>  
<221> CDS  
<222> (1)..(1182)  
<223>

<220>  
<221> misc\_feature  
<223> Subspecies: pertenuis (CDC-1 strain)

<400> 25  
atg ttt gtg cgc agt gac atg ttc ccc aaa aac act gct gtt gaa att 48  
Met Phe Val Arg Ser Asp Met Phe Pro Lys Asn Thr Ala Val Glu Ile  
1 5 10 15  
agc aac tta gaa aag aat gcc aag gct cag gca gtg gtt att ggg cac 96  
Ser Asn Leu Glu Lys Asn Ala Lys Ala Gln Ala Val Val Ile Gly His  
20 25 30  
gca ggg atc ccc ggt ctt cta gtt agc ctt gca ccc gct gct gca gca 144  
Ala Gly Ile Pro Gly Leu Leu Val Ser Leu Ala Pro Ala Ala Ala Ala  
35 40 45  
cag ctt ggg att ggc gta tac caa gct gtg cgt gta cgc gta cgt acc 192  
Gln Leu Gly Ile Gly Val Tyr 55 Gln Ala Val Arg Val Arg Thr  
50 60  
ttg ggt acc gtg cgc ggt ggg tct caa aca agt cag gac gga ctg tcc 240  
Leu Gly Thr Val Arg Gly Gly Ser Gln Thr Ser Gln Asp Gly Leu Ser  
65 70 75 80  
ctt gca tct ttg ccg tcc cgt gtg cct gcg cgc ccc gcg cag cgt gat 288  
Leu Ala Ser Leu Pro Ser Arg Val Pro Ala Arg Pro Ala Gln Arg Asp  
85 90 95  
cct ctg tca tcc ccg ccg gca ggt cac act gta ccg gaa tat cgc gat 336  
Pro Leu Ser Ser Pro Pro Ala Gly His Thr Val Pro Glu Tyr Arg Asp  
100 105 110

acg gtt att ttc gat gac ccg cgt ttg gtt tcc cct ttg tct cgt gag Thr Val Ile Phe Asp Asp Pro Arg Leu Val Ser Pro Leu Ser Arg Glu 115 120 125	384
gga ggg gag cgt gag gtg gag gac gtg ccg aag gta gtg gag ccg gcc Gly Gly Glu Arg Glu Val Glu Asp Val Pro Lys Val Glu Pro Ala 130 135 140	432
tct gag cgt gag gga ggg gag cgt gag gtg gag gac gtg ccg aag gta Ser Glu Arg Glu Gly Glu Arg Glu Val Glu Asp Val Pro Lys Val 145 150 155 160	480
gtg gag ccg gcc tct gag cgt gag gga ggg gag cgt gag gtg gag gac Val Glu Pro Ala Ser Glu Arg Glu Gly Glu Arg Glu Val Glu Asp 165 170 175	528
gtg ccg aag gta gtg gag ccg gcc tct gag cgt gag gga ggg gag cgt Val Pro Lys 180 Val Glu Pro Ala Ser Glu Arg Glu Gly Glu Arg 185 190	576
gag gtg gag gac gtg ccg aag gta gtg gag ccg gcc tct gag cgt gag Glu Val Glu Asp Val Pro Lys Val Val Glu Pro Ala Ser Glu Arg Glu 195 200 205	624
gga ggg gag cgt gag gtg gag gac gtg ccg aag gta gtg gag ccg gcc Gly Gly Glu Arg Glu Val Glu Asp Val Pro Lys Val Val Glu Pro Ala 210 215 220	672
tct gag cgt gag gga ggg gag cgt gag gtg gag gac gtg ccg aag gta Ser Glu Arg Glu Gly Glu Arg Glu Val Glu Asp Val Pro Lys Val 225 230 235 240	720
gtg gag ccg gcc tct gag cgt gag gga ggg gag cgt gag gtc gct tct Val Glu Pro Ala Ser Glu Arg Glu Gly Glu Arg Glu Val Ala Ser 245 250 255	768
cag cat acg aag cag cca tcc cac tcg gtt tcc aac tca gct ccc aat Gln His Thr Lys Gln Pro Ser His Ser Val Ser Asn Ser Ala Pro Asn 260 265 270	816
cag ttt ccg aac cct gag ggg gaa ctc ccc ttt acg ctc cct gac cta Gln Phe Arg Asn Pro Glu Gly Leu Pro Phe Thr Leu Pro Asp Leu 275 280 285	864
tcc gag tca gaa att gtg gtt ccg gag gaa cag aaa gga cgt gcg cat Ser Glu Ser Glu Ile Val Val Pro Glu Glu Gln Lys Gly Arg Ala His 290 295 300	912
ccc cag gtg ata ccc gag ggt gcg cca cgt gga ctg caa cct ggt gaa Pro Gln Val Ile Pro Glu Gly Ala Pro Arg Gly Leu Gln Pro Gly Glu 305 310 315 320	960
tac tac gta cag att gca gtc ttt cat gac gct atc cag gtg cag agc Tyr Tyr Val Gln Ile Ala Val Phe His Asp Ala Ile Gln Val Gln Ser 325 330 335	1008
att gtc cac cgt tac ggg gta gaa tac ccc atc gca gtg gag cag gac Ile Val His Arg Tyr Gly Val Glu Tyr Pro Ile Ala Val Glu Gln Asp 340 345 350	1056

atc cat gaa ggt aag gtg cgt ttc acc gta tgc gtc ggt cct gtc caa 1104  
 ile his glu gly lys val arg phe thr val cys val gly pro val gln  
 355 360 365

aaa gac gaa cgc ggc gcg gta cta gag aac ttc caa agg ttt gga ttc 1152  
 lys asp glu arg gly ala val leu glu asn phe gln arg phe gly phe  
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<210> 26

<211> 393

<212> PRT

<213> Treponema pallidum

<220>

<221> misc\_feature

<223> Subspecies: pertenue (CDC-1 strain)

<400> 26

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Ser Asn Leu Glu Lys Asn Ala Lys Ala Gln Ala Val Val Ile Gly His  
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Ala Gly Ile Pro Gly Leu Leu Val Ser Leu Ala Pro Ala Ala Ala Ala  
 35 40 45

Gln Leu Gly Ile Gly Val Tyr Gln Ala Val Arg Val Arg Val Arg Thr  
 50 55 60

Leu Gly Thr Val Arg Gly Gly Ser Gln Thr Ser Gln Asp Gly Leu Ser  
 65 70 75 80

Leu Ala Ser Leu Pro Ser Arg Val Pro Ala Arg Pro Ala Gln Arg Asp  
 85 90 95

Pro Leu Ser Ser Pro Pro Ala Gly His Thr Val Pro Glu Tyr Arg Asp  
 100 105 110

Thr Val Ile Phe Asp Asp Pro Arg Leu Val Ser Pro Leu Ser Arg Glu  
 115 120 125

Gly Gly Glu Arg Glu Val Glu Asp Val Pro Lys Val Val Glu Pro Ala  
 130 135 140

Ser Glu Arg Glu Gly Gly Glu Arg Glu Val Glu Asp Val Pro Lys Val

145                      150                      155                      160  
 Val Glu Pro Ala Ser Glu Arg Glu Gly Gly Glu Arg Glu Val Glu Asp  
    165                      170                      175  
 Val Pro Lys Val Val Glu Pro Ala Ser Glu Arg Glu Gly Gly Glu Arg  
    180                      185                      190  
 Glu Val Glu Asp Val Pro Lys Val Val Glu Pro Ala Ser Glu Arg Glu  
    195                      200                      205  
 Gly Gly Glu Arg Glu Val Glu Asp Val Pro Lys Val Val Glu Pro Ala  
    210                      215                      220  
 Ser Glu Arg Glu Gly Gly Glu Arg Glu Val Glu Asp Val Pro Lys Val  
    225                      230                      235                      240  
 Val Glu Pro Ala Ser Glu Arg Glu Gly Gly Glu Arg Glu Val Ala Ser  
    245                      250                      255  
 Gln His Thr Lys Gln Pro Ser His Ser Val Ser Asn Ser Ala Pro Asn  
    260                      265                      270  
 Gln Phe Arg Asn Pro Glu Gly Glu Leu Pro Phe Thr Leu Pro Asp Leu  
    275                      280                      285  
 Ser Glu Ser Glu Ile Val Val Pro Glu Glu Gln Lys Gly Arg Ala His  
    290                      295                      300  
 Pro Gln Val Ile Pro Glu Gly Ala Pro Arg Gly Leu Gln Pro Gly Glu  
    305                      310                      315                      320  
 Tyr Tyr Val Gln Ile Ala Val Phe His Asp Ala Ile Gln Val Gln Ser  
    325                      330                      335  
 Ile Val His Arg Tyr Gly Val Glu Tyr Pro Ile Ala Val Glu Gln Asp  
    340                      345                      350  
 Ile His Glu Gly Lys Val Arg Phe Thr Val Cys Val Gly Pro Val Gln  
    355                      360                      365  
 Lys Asp Glu Arg Gly Ala Val Leu Glu Asn Phe Gln Arg Phe Gly Phe  
    370                      375                      380  
 Lys Asp Ala Phe Leu Lys Lys Ala Arg  
    385                      390